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| Kindergarten Science and Technology Scope & Sequence | | | | |
|  | **Term 1** | **Term 2** | **Term 3** | **Term 4** |
| **Science** | **Biology**  **Staying Alive** | **Chemistry**  **What is it Made of?** | **Physics**  **On the Move** | **Earth and Space Science**  **Weather in My World** |
| **Strand** | **Knowledge & Understanding Strand**  Natural Environment  **Skill Strand**  WS | **Knowledge & Understanding Strand**  Made Environment  **Skill Strand**  WS & WT | **Knowledge & Understanding Strand**  Natural Environment  **Skill Strand**  WS& WT | **Knowledge & Understanding Strand**  Natural Environment  **Skill Strand**  WS |
| **Outcomes** | STe-4WSExplores their immediate surroundings by questioning, observing using their senses and communicating to share their observations and ideas  STe-8NE Identifies the basic needs of living things | STe-4WS Explores their immediate surroundings by questioning, observing using their senses and communicating to share their observations and ideas  STe-5WT Uses a simple design process to produce solutions with identrified purposes.  STe-9ME Identifies that objects are made of materials that have observable properties  STe-10ME Recognise how familiar products, places and spaces are made to suit their purpose. | STe-4WS  Explores their immediate surroundings by questioning, observing using their senses and communicating to share their observations and ideas  STe-6NE Identifies that the way objects move depends on a variety of factors  STe-5WT  Uses a simple design process to produce solutions with identified purposes. | STe-4WS  Explores their immediate surroundings by questioning, observing using their senses and communicating to share their observations and ideas  STe-7NE Observes, using their senses, how daily and seasonal changes in the environment affect them and other living things |
| **Content** | Living things have basic needs, including food and water. (ACSSU002) | Objects are made of materials that have observable properties (ACSSU003) | The way objects move depends on a variety of factors, including their size and shape. (ACSSU005) | Daily and seasonal changes in our environment, including the weather, affect everyday life. (ACSSU004) |
|  | Students:   * describe what plants and animals, including humans, need to stay alive and healthy, eg food, water and air * identify the needs of a variety of living things in a range of situations, eg pets at home, plants in the garden or plants and animals in bushland and/or on farms | Students:   * observe, using their [senses](http://syllabus.bos.nsw.edu.au/glossary/sci/senses/?ajax), a range of materials used to make specific objects, products, places and spaces * group a range of materials on the basis of observable properties, eg flexibility, texture, strength and colour * explore a range of existing products, places and spaces, and discuss their likes and dislikes  * identify a variety of materials that are used in a range of existing familiar products, places and spaces * communicate their ideas about how familiar products, places and spaces work and have features that help them to be useful, eg shoulder straps, zippers and compartments in a school bag  * sketch or model ideas for a product, place or space and recount how their ideas suit their purpose | Students:   * observe the way a variety of familiar objects move, eg sliding, rolling, spinning and bouncing on the ground * identify that the way an object moves depends on its size and shape, eg tennis balls and blocks | Students:   * describe how people respond to familiar changes in their environment, eg day and night and seasonal changes * identify how plants and animals respond to changes in the environment, eg trees losing their leaves and the thickness of animals' fur |

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| Year One Science and Technology Scope & Sequence | | | | |
|  | **Term 1** | **Term 2** | **Term 3** | **Term 4** |
| **Science** | **Biology**  **School Safari** | **Chemistry**  **Spot the Difference** | **Physics**  **Up, down and all around** | **Earth and Space Science**  **Look! Listen!** |
| **Strand** | **Knowledge & Understanding Strand**  Natural Environment  Living World  **Skill Strand**  WS | **Knowledge & Understanding Strand**  Made Environment  Material World  **Skill Strand**  WS & WT | **Knowledge & Understanding Strand**  Natural Environment  Earth and Space  **Skill Strand**  WS& WT | **Knowledge & Understanding Strand**  Natural Environment  Physical World  **Skill Strand**  WS |
| **Outcomes** | **ST1-4WS** investigates questions and predictions by collecting and recording data, sharing and reflecting on their experiences and comparing what they and others know.  **ST1-10LW** describes external features, changes in and growth of living things  **ST1-11LW** describes ways that different places in the environment provide for the needs of living things | **ST1-4WS** investigates questions and predictions by collecting and recording data, sharing and reflecting on their experiences and comparing what they and others know.  **ST1-12MW** identifies ways that everyday materials can be physically changed and combined for a particular purpose | **ST1-4WS** investigates questions and predictions by collecting and recording data, sharing and reflecting on their experiences and comparing what they and others know.  **ST1-8ES** describes some observable changes that occur in the sky and landscape  ST1-9ES identifies ways that people use science in their daily lives to care for the environment and the Earth’s resources | **ST1-4WS** investigates questions and predictions by collecting and recording data, sharing and reflecting on their experiences and comparing what they and others know.  **ST1-6PW** describes some sources of light and sound that they sense in their daily lives |
| **Content** | Living things have a variety of external features. (ACSSU017) | Everyday materials can be physically changed in a variety of ways. (ACSSU018) | Observable changes occur in the sky and landscape. (ACSSU019) | Light and sound are produced by a range of sources and can be sensed. (ACSSU020) |
|  | Students:   * describe some external features of a variety of living things, including plants and animals * use a range of methods, including [fieldwork](http://syllabus.bos.nsw.edu.au/glossary/sci/fieldwork/?ajax), to identify plants or animals in their local area * devise simple classification systems based on the observable external features of plants or animals identified in the local area * Living things grow, change and have offspring similar to themselves. (ACSSU030) * record the changes in growth of a common plant or animal, using informal units, provided tables and digital technologies as appropriate ICTN * observe and record some of the changes a common plant or animal shows during its life, using an appropriate digital technology, eg a camera ICTNL * compare the appearance of adult living things with their offspring, eg trees, insects, birds, reptiles, cats or humans * Living things live in different places where their needs are met. (ACSSU211) * observe the different places in a local land or aquatic environment where living things can be found, eg a schoolyard, pond, beach or bush * explore the needs of a plant or an animal in its environment * describe how some different places in a local land or aquatic environment provide for the needs of the animals or plants that live there CCT * observe and record ways people use science knowledge and skills in their daily lives to care for living things, such as gardeners, farmers or pet carers | Students:   * predict the changes materials will undergo when they are combined, eg sugar in water or different colours of paint; and when they are mixed, eg sand and water or cake ingredients CCT * compare their [observations](http://syllabus.bos.nsw.edu.au/glossary/sci/observation/?ajax) with their predictions when materials are combined and mixed * explore examples of how people at home and work change and combine different materials for a particular purpose, eg food preparation and making concrete CCTWE * The different properties of materials enable them to be used for particular purposes.   Students:   * use their [senses](http://syllabus.bos.nsw.edu.au/glossary/sci/senses/?ajax) to identify the similarities and differences in the properties of materials, eg the textures of different fabrics, the difference in hardness of solid materials and the runniness of different liquids * identify the properties of some common materials and why they are used for particular purposes, eg the waterproof property of plastic rainwear or insulating property of a woollen jumper CCT * identify a range of natural materials used by Aboriginal and Torres Strait Islander peoples and share ideas about the ways they are used to suit a particular purpose, eg the use of wood, stone and fibres in the built environment AHC | Students:   * use a range of methods to describe observable, short-term changes in the sky, eg clouds, the appearance of the stars at night and the position of the sun during the day * observe and record environmental changes that occur over a longer time to identify patterns of events, eg seasonal changes in temperature and the appearance of the moon LN * describe some physical features of a landscape that have been changed by floods, droughts or processes, eg weathering and erosion SE * Earth's resources, including water, are used in a variety of ways. (ACSSU032) * Students: * identify that some common resources are obtained from the Earth, including soil, minerals and water CCT * describe how some materials obtained from the Earth are used in a range of products at home or at school * share their [observations](http://syllabus.bos.nsw.edu.au/glossary/sci/observation/?ajax) and ideas about the ways that water is used by people in their daily lives LPSC * identify some actions which could be taken to care for and use water sustainably, eg turning off dripping taps and/or taking shorter showers SEEU * explore ways in which people use science knowledge and skills in their daily lives to care for the environment and use resources sustainably (ACSHE022, ACSHE035) CCSECCTL | Students:   * share their [observations](http://syllabus.bos.nsw.edu.au/glossary/sci/observation/?ajax) and ideas about different sources of light and sound encountered in their daily lives and their [senses](http://syllabus.bos.nsw.edu.au/glossary/sci/senses/?ajax) that detect them PSC * produce different sounds from familiar objects using actions, eg striking, blowing, scraping or shaking * use their sense of touch to feel vibrations from familiar objects and infer that sound is made when an object vibrates, eg vocal cords, a stringed instrument or a rubber band * explore how the loudness and range of types of sounds are related to the action used to produce them * compare the range of types of sounds produced by musical instruments used by people from different cultures, eg didgeridoo or sitar IUAHCA |

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| Year Two Science and Technology Content Scope & Sequence | | | | |
|  | **Term 1** | **Term 2** | **Term 3** | **Term 4** |
| **Science** | **Biology**  **Watch it Grow** | **Chemistry**  All Mixed Up | **Physics**  **Waterworks** | **Earth and Space Science**  **Push-pull** |
| **Strand** | **Knowledge & Understanding Strand**  Natural Environment  Living World  **Skill Strand**  WS | **Knowledge & Understanding Strand**  Made Environment  Material World  **Skill Strand**  WS & WT | **Knowledge & Understanding Strand**  Natural Environment  Earth and Space  **Skill Strand**  WS& WT | **Knowledge & Understanding Strand**  Natural Environment  Physical World  **Skill Strand**  WS |
| **Outcomes** | **ST1-4WS** investigates questions and predictions by collecting and recording data, sharing and reflecting on their experiences and comparing what they and others know.  **ST1-10LW** describes external features, changes in and growth of living things  **ST1-11LW** describes ways that different places in the environment provide for the needs of living things | **ST1-4WS** investigates questions and predictions by collecting and recording data, sharing and reflecting on their experiences and comparing what they and others know.  **ST1-12MW** identifies ways that everyday materials can be physically changed and combined for a particular purpose  **St1-13MW** relates the properties of common materials to their use for particular purposes | **ST1-4WS** investigates questions and predictions by collecting and recording data, sharing and reflecting on their experiences and comparing what they and others know.  **ST1-9ES** identifies ways that people use science in their daily lives to care for the environment and the Earth’s resources | **ST1-4WS** investigates questions and predictions by collecting and recording data, sharing and reflecting on their experiences and comparing what they and others know.  **ST1-7PW**describes effects of pushes and pulls on objects they encounter. |
| **Content** | Living things have a variety of external features. (ACSSU017) | Different materials can be combined, including by mixing, for a particular purpose. (ACSSU031) | Earth's resources, including water, are used in a variety of ways. (ACSSU032) | A push or a pull affects how an object moves or changes shape. (ACSSU033) |
|  | Students:   * describe some external features of a variety of living things, including plants and animals * use a range of methods, including [fieldwork](http://syllabus.bos.nsw.edu.au/glossary/sci/fieldwork/?ajax), to identify plants or animals in their local area * devise simple classification systems based on the observable external features of plants or animals identified in the local area * Living things grow, change and have offspring similar to themselves. (ACSSU030) * record the changes in growth of a common plant or animal, using informal units, provided tables and digital technologies as appropriate ICTN * observe and record some of the changes a common plant or animal shows during its life, using an appropriate digital technology, eg a camera ICTNL * compare the appearance of adult living things with their offspring, eg trees, insects, birds, reptiles, cats or humans * Living things live in different places where their needs are met. (ACSSU211) * observe the different places in a local land or aquatic environment where living things can be found, eg a schoolyard, pond, beach or bush * explore the needs of a plant or an animal in its environment * describe how some different places in a local land or aquatic environment provide for the needs of the animals or plants that live there CCT * observe and record ways people use science knowledge and skills in their daily lives to care for living things, such as gardeners, farmers or pet carers | Students:   * explore how some everyday materials can be physically changed by actions, eg bending, twisting, stretching, squashing or heating * Different materials can be combined, including by mixing, for a particular purpose.   Students:   * use their [senses](http://syllabus.bos.nsw.edu.au/glossary/sci/senses/?ajax) to identify the similarities and differences in the properties of materials, eg the textures of different fabrics, the difference in hardness of solid materials and the runniness of different liquids * identify the properties of some common materials and why they are used for particular purposes, eg the waterproof property of plastic rainwear or insulating property of a woollen jumper CCT * identify a range of natural materials used by Aboriginal and Torres Strait Islander peoples and share ideas about the ways they are used to suit a particular purpose, eg the use of wood, stone and fibres in the built environment AHC | Students:   * identify that some common resources are obtained from the Earth, including soil, minerals and water CCT * describe how some materials obtained from the Earth are used in a range of products at home or at school * share their [observations](http://syllabus.bos.nsw.edu.au/glossary/sci/observation/?ajax) and ideas about the ways that water is used by people in their daily lives LPSC * identify some actions which could be taken to care for and use water sustainably, eg turning off dripping taps and/or taking shorter showers SEEU * explore ways in which people use science knowledge and skills in their daily lives to care for the environment and use resources sustainably (ACSHE022, ACSHE035) CCSECCTL | Students:   * describe the effects of pushes and pulls on familiar objects, including moving, stopping and changing direction, changing shape or breaking * explore how different strengths of pushes and pulls affect the movement of objects on land and through water and air N * demonstrate some ways that people use pushes and pulls in their everyday life, eg sweeping with brooms or riding skateboards CCT |

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| Year Three Science and Technology Content Scope & Sequence | | | | |
|  | **Term 1** | **Term 2** | **Term 3** | **Term 4** |
| **Science** | **Biology**  **Feathers, Fur or Scales?** | **Chemistry**  **Melting Moments** | **Physics**  **Heating Up** | **Earth and Space Science**  **Night and Day** |
| **Strand** | **Knowledge & Understanding Strand**  Natural Environment  Living World  Information  **Skill Strand**  WS | **Knowledge & Understanding Strand**  Made Environment  Material World  **Skill Strand**  WS & WT | **Knowledge & Understanding Strand**  Natural Environment  Physical World  **Skill Strand**  WS& WT | **Knowledge & Understanding Strand**  Natural Environment  Earth and Space  **Skill Strand**  WS |
| **Outcomes** | **ST2-4WS** investigates their questions and predictions by analysing collected data, suggesting explanations for their findings, and communicating and reflecting on the processes undertaken  **ST2-10LW** describes that living things have life cycles, can be distinguished from non-living things and grouped, based on their observable features  **ST2-151** describes ways that information solutions are designed and produced, and factors to consider when people use and interact with information sources and technologies | **ST2-4WS** investigates their questions and predictions by analysing collected data, suggesting explanations for their findings, and communicating and reflecting on the processes undertaken  **ST2-12MW** identifies that adding or removing heat causes a change of state between solids and liquids | **ST2-4WS** investigates their questions and predictions by analysing collected data, suggesting explanations for their findings, and communicating and reflecting on the processes undertaken  **ST2-6PW**  identifies ways heat is produced and that heat moves from one object to another | **ST2-4WS** investigates their questions and predictions by analysing collected data, suggesting explanations for their findings, and communicating and reflecting on the processes undertaken  **ST2-9ES**  describes how relationships between the sun and the Earth cause regular changes |
| **Content** | Living things can be grouped on the basis of observable features and can be distinguished from non-living things (ACSSU044) | A change of state between solid and liquid can be caused by adding or removing heat (ACSSIO46) | Heat can be produced in many ways and can move from one object to another. (ACSSU049) | Earth’s rotation on its axis causes regular changes, including night and day (ACSSU048) |
|  | Students:   * sort objects according to whether they are living or non-living * identify some features of living things that distinguish them from non-living things, eg reproducing, growing and responding to stimuli * identify and use patterns in the observable features of living things to group them, by using tables, diagrams or flowcharts LN * research ways that Aboriginal and Torres Strait Islander peoples classify some plants or animals AHCCCT | Students:   * describe some everyday situations where solids and liquids change state by adding heat (heating) or removing heat (cooling) * predict and observe the effects of adding heat or removing heat on a variety of everyday solids and/or liquids, eg butter, chocolate and water CCT * describe how scientific knowledge about the effects of heating and cooling is used by people in their everyday life, eg the types of clothes worn, the packaging and preparation of food and everyday devices, eg freezers, irons or cooktops | Students:   * identify in their environment some different ways in which heat is produced, eg by electricity, burning (chemical) and friction (motion) * observe the effects of heat moving from one object to another, eg the feeling when hands are placed in warm or cold water * describe how people use scientific knowledge in their work and everyday life to control the movement of heat from one object to another, eg a pot holder, insulated bags or thermos CCT | Students:   * demonstrate that the rotation of the Earth on its axis is the cause of night and day, eg by using [models](http://syllabus.bos.nsw.edu.au/glossary/sci/model/?ajax) of the Earth and sun * describe local seasonal changes that occur as a result of the Earth's movement around the sun * observe and record changes in the length and direction of a shadow during the day to show how the movement of the Earth around the sun can be used to measure time, eg by using a shadow clock or sundial N |

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| Year Four Science and Technology Content Scope & Sequence | | | | |
|  | **Term 1** | **Term 2** | **Term 3** | **Term 4** |
| **Science** | **Biology**  **Plants in Action and Friends and Foes** | **Chemistry**  **Material World** | **Physics**  **Smooth Moves** | **Earth and Space Science**  **Beneath Our Feet** |
| **Strand** | **Knowledge & Understanding Strand**  Natural Environment  Living World  **Skill Strand**  WS | **Knowledge & Understanding Strand**  Made Environment  Material World  Information  **Skill Strand**  WS & WT | **Knowledge & Understanding Strand**  Natural Environment  Physical World  **Skill Strand**  WS& WT | **Knowledge & Understanding Strand**  Natural Environment  Earth and Space  **Skill Strand**  WS |
| **Outcomes** | **ST2-4WS** investigates their questions and predictions by analysing collected data, suggesting explanations for their findings, and communicating and reflecting on the processes undertaken.  **ST2-11LW** describes ways that science knowledge helps people understand the effect of their actions on the environment and on the survival of living things  **ST2-10LW** describes that living things have life cycles, can be distinguished from non-living things and grouped, based on their observable features | **ST2-4WS** investigates their questions and predictions by analysing collected data, suggesting explanations for their findings, and communicating and reflecting on the processes undertaken.  **ST2-151** describes ways that information solutions are designed and produced, and factors to consider when people use and interact with information sources and technologies  **ST2-13MW** identifies the physical properties of natural and processed materials, and how these properties influence their use | **ST2-4WS** investigates their questions and predictions by analysing collected data, suggesting explanations for their findings, and communicating and reflecting on the processes undertaken  **ST2-7PW**describes everyday interactions between objects that result from contact and non-contact forces | **ST2-4WS** investigates their questions and predictions by analysing collected data, suggesting explanations for their findings, and communicating and reflecting on the processes undertaken  **ST2-8ES** describes some observable changes over time on the Earth’s surface that result from natural processes and human activity |
| **Content** | Living things, including plants and animals, depend on each other and the environment to survive. (ACSSU073)  Living things have life cycles. (ACSSU072) | Natural and processed materials have a range of physical properties which influence their use. (ACSSU074) | Forces can be exerted by one object on another through direct contact or from a distance. (ACSSU076) | Earth's surface changes over time as a result of natural processes and human activity. (ACSSU075) |
|  | Students:   * observe first-hand one animal or plant as it grows and develops, and sequence the stages in its life cycle L * identify ways that the environment can affect the life cycle of plants and animals * identify some factors in the local environment that are needed by plants and animals for survival * outline the relationship between plants and animals, including that plants are able to use light to make food, while animals must eat plants or other animals to obtain food L * [investigate](http://syllabus.bos.nsw.edu.au/glossary/sci/investigate/?ajax) the role of living things in a habitat, eg plants as producers and microbes (micro-organisms) as decomposers CCT * gather information about some relationships between living things, eg predator-prey, competitors and mutually beneficial relationships SEL * predict the effect of natural changes in the environment on some relationships between plants and animals, eg drought and fire * describe some examples of how science knowledge helps people to understand the effect of their actions on the environment and the survival of living things (ACSHE051, ACSHE062) PSCSEEU | Students:   * use common digital technologies and applications to organise and communicate information for a specific task, eg word processing and digital presentation software ICT * observe the changes that occur in the physical properties of everyday materials when they are heated, cooled, bent, stretched, folded and twisted * observe and describe the [structure](http://syllabus.bos.nsw.edu.au/glossary/sci/structure/?ajax) of materials that can be seen with the naked eye and a magnifying glass, eg grains in bread, particles in chipboard or cork, threads within a fabric or fibres in paper L * identify the properties of some natural and processed materials * describe how a range of common natural and processed materials are used in everyday life * generate ideas about how the physical properties of some natural and processed materials influence their use CCT | Students:   * [investigate](http://syllabus.bos.nsw.edu.au/glossary/sci/investigate/?ajax) the effect of forces on the behaviour of objects, eg dropping, bouncing or rolling objects CCT * observe the way the force of gravity pulls objects towards the Earth, eg dropping objects from different heights * observe everyday situations where the direct contact force (friction) affects the movement of objects on different surfaces, eg a bike or skateboard * carry out tests to [investigate](http://syllabus.bos.nsw.edu.au/glossary/sci/investigate/?ajax) the forces of attraction and repulsion between magnets | Students:   * use appropriate tools and equipment to collect and record [data](http://syllabus.bos.nsw.edu.au/glossary/sci/data/?ajax) about some changes in natural conditions, eg tides, daily temperature, rainfall and wind NLICT * investigate how change in the environment is used by Aboriginal and Torres Strait Islander peoples to develop seasonal calendars AHCCCT * describe some changes in the landscape that have occurred over time as a result of natural processes, eg erosion by wind and water * [research](http://syllabus.bos.nsw.edu.au/glossary/sci/research/?ajax) changes that have occurred in a local environment in Australia or an Asian region as a result of human activities, eg increasing erosion, construction of built environments and regeneration of an area ASE |

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| Year Five Science and Technology Content Scope & Sequence | | | | |
|  | **Term 1** | **Term 2** | **Term 3** | **Term 4** |
| **Science** | **Biology**  **Desert Survivors** | **Chemistry**  **What’s the Matter?** | **Physics**  **Light Shows** | **Earth and Space Science**  **Earth’s Place in Space** |
| **Strand** | **Knowledge & Understanding Strand**  Natural Environment  Living World  **Skill Strand**  WS | **Knowledge & Understanding Strand**  Made Environment  Material World  Information  **Skill Strand**  WS & WT | **Knowledge & Understanding Strand**  Natural Environment  Physical World  **Skill Strand**  WS& WT | **Knowledge & Understanding Strand**  Natural Environment  Earth and Space  **Skill Strand**  WS |
| **Outcomes** | **ST3-4WS** investigates by posing questions, including testable questions, making predictions and gathering data to draw evidence-based conclusions and develop explanations.  **ST3-10LW**  describes how structural features and other adaptations of living things help them to survive in their environment | **ST3-4WS** investigates by posing questions, including testable questions, making predictions and gathering data to draw evidence-based conclusions and develop explanations  **ST3-12MW**  identifies the observable properties of solids, liquids and gases, and that changes made to materials are reversible or irreversible | **ST3-4WS** investigates by posing questions, including testable questions, making predictions and gathering data to draw evidence-based conclusions and develop explanations.  **ST3-7PW** uses scientific knowledge about the transfer of light to solve problems that directly affect people’s lives | **ST3-4WS** investigates by posing questions, including testable questions, making predictions and gathering data to draw evidence-based conclusions and develop explanations.  **ST3-8ES**  describes how discoveries by people from different cultures and times have contributed to advancing scientific understanding of the solar system |
| **Content** | Living things have structural features and adaptations that help them to survive in their environment. (ACSSU043) | Solids, liquids and gases have different observable properties and behave in different ways. (ACSSU077) | Light from a source forms shadows and can be absorbed, reflected and refracted. (ACSSU080) | The Earth is part of a [system](http://syllabus.bos.nsw.edu.au/glossary/sci/system/?ajax) of planets orbiting around a star (the sun). (ACSSU078) |
|  | Students:   * observe and describe the structural features of some native Australian animals and plants SE * present ideas and explanations about how the structural features and behaviour of some plants and animals help them to survive in their environment, eg shiny surfaces of leaves on sand dune plants and nocturnal behaviour in some animals LCCT * [research](http://syllabus.bos.nsw.edu.au/glossary/sci/research/?ajax) the conditions needed for a particular plant to grow and survive in its environment, eg an indoor plant, plants in deserts, drought-resistant wheat or salt-tolerant plants L | Students:   * observe and compare the differences in the properties and behaviour of solids and liquids, eg shape and ability to flow * demonstrate that air has mass and takes up space, eg in an inflated basketball, bubbles, balloons and beaten egg white | Students:   * classify materials as transparent, opaque or translucent, based on whether light passes through them, is absorbed, reflected or scattered * observe and describe how the absorption of light by materials and objects forms shadows, eg building shading * gather [evidence](http://syllabus.bos.nsw.edu.au/glossary/sci/evidence/?ajax) to support their predictions about how light travels and is reflected CCT * research, using [secondary sources](http://syllabus.bos.nsw.edu.au/glossary/sci/secondary-sources/?ajax) to gather information about science understandings, discoveries and/or inventions that depend on the reflection and refraction of light and how these are used to solve problems that directly affect people's lives, eg mirrors, magnifiers, spectacles and prisms (ACSHE083, ACSHE100) CCTICTL | Students:   * research the key features of the planets of the solar system and compare how long each takes to orbit the sun LN * demonstrate using [models](http://syllabus.bos.nsw.edu.au/glossary/sci/model/?ajax) that the Earth revolves around the sun and the moon revolves around the Earth * research the important contributions made by people from a range of cultures and organisations, using [technologies](http://syllabus.bos.nsw.edu.au/glossary/sci/technologies/?ajax) of the time, to advancing scientific understanding of the solar system such as Aryabhata, Copernicus, Galileo, CSIRO and NASA (ACSHE082, ACSHE099) CCCCTIUWE * describe how Aboriginal and Torres Strait Islander peoples use observations of the night sky to inform decisions about some everyday activities, eg food gathering and ceremonies AHC |

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| Year Six Science and Technology Scope & Sequence | | | | |
|  | **Term 1** | **Term 2** | **Term 3** | **Term 4** |
| **Science** | **Biology**  **Marvellous Micro-organisms** | **Chemistry**  **Change Detectives** | **Physics**  **Its Electrifying &**  **Essential Energy** | **Earth and Space Science**  **Earthquake Explorers** |
| **Strand** | **Knowledge & Understanding Strand**  Natural Environment  Living World  **Skill Strand**  WS | **Knowledge & Understanding Strand**  Made Environment  Material World  Information  **Skill Strand**  WS & WT | **Knowledge & Understanding Strand**  Natural Environment  Physical World  **Skill Strand**  WS& WT | **Knowledge & Understanding Strand**  Natural Environment  Earth and Space  **Skill Strand**  WS |
| **Outcomes** | **ST3-4WS** investigates by posing questions, including testable questions, making predictions and gathering data to draw evidence-based conclusions and develop explanations  **ST3-11LW** describes ways that different places in the environment provide for the needs of living things | **ST3-4WS** investigates by posing questions, including testable questions, making predictions and gathering data to draw evidence-based conclusions and develop explanations  **ST3-12MW** identifies the observable properties of solids, liquids and gases, and that changes made to materials are reversible or irreversible | ST3-4WS investigates by posing questions, including testable questions, making predictions and gathering data to draw evidence-based conclusions and develop explanations  **ST3-6PW** describes how scientific understanding about the sources, transfer and transformation of electricity is related to making decisions about its use | **ST3-4WS** investigates by posing questions, including testable questions, making predictions and gathering data to draw evidence-based conclusions and develop explanations  **ST3-9ES** explains rapid change at the Earth’s surface caused by natural events, using evidence provided by advances in technology and scientific understanding |
| **Content** | The growth and survival of living things are affected by the physical conditions of their environment. (ACSSU094) | Changes to materials can be reversible, such as melting, freezing, evaporating; or irreversible, such as burning and rusting. (ACSSU095) | Electrical circuits provide a means of transferring and transforming electricity. (ACSSU097) | Sudden geological changes or extreme weather conditions can affect Earth's surface. (ACSSU096) |
|  | Students:   * identify some physical conditions of a local environment, eg temperature, slope, wind speed, amount of light and water * make predictions about how changing the physical conditions of the environment impacts on the growth and survival of living things, eg different amounts of light or water on plant growth or the effect of different temperatures on the growth of yeast or bread mould CCTPSCN * use gathered [data](http://syllabus.bos.nsw.edu.au/glossary/sci/data/?ajax) to develop explanations about how changing the physical conditions of the environment affects the growth and survival of living things LNSE | Students:   * observe and describe some readily observable reversible changes that materials can undergo, eg by melting and then solidifying chocolate, and dissolving and retrieving salt or sugar from water * make and test predictions about the effect of temperature on the state of some substances, eg adding and removing heat from water CCTN * observe some irreversible changes that common materials undergo to identify that the changes may result in new materials or products, eg rusting iron, burning paper, cooking a cake and making toffee * classify some observable changes that materials undergo as reversible or irreversible * The properties of materials determine their use for specific purposes. * Students: * identify the properties of materials used in a familiar product and relate them to its use * explore how materials are used in innovative ways for specific purposes, eg the use of soft-fall materials in playgrounds and geotextiles to retain water in landscaping * describe how scientific and technological knowledge about the properties of materials can be used to inform decisions about use for their specific purposes CCT * research the reasons for and the benefits of using solid, liquid and gaseous fuels for heating CCTSE | Students:   * identify potential risks and demonstrate safe use when using electrical circuits and devices WE * demonstrate the need for a circuit to be complete to allow the transfer (flow) of electricity * construct simple circuits incorporating devices, eg switches and light globes * observe and describe how some devices transform (change) electricity to heat energy, light, sound or movement, eg hair dryers, light globes, bells and fans LCCT * Energy from a variety of sources can be used to generate electricity and this knowledge can inform personal and community-based decisions about using these sources sustainably. * [research](http://syllabus.bos.nsw.edu.au/glossary/sci/research/?ajax) and present ideas about the different ways electricity can be generated, eg burning coal or natural gas; solar, hydroelectric, geothermal, wind and wave-generated electricity L * describe how scientific knowledge can be used to inform personal and community decisions about the use and conservation of sustainable sources of energy (ACSHE217, ACSHE220) SEPSCLCCT | Students:   * describe using examples how natural geological events cause rapid changes to the Earth's surface, eg earthquakes, volcanic eruptions or tsunamis in the Asian region or throughout the world A * [research](http://syllabus.bos.nsw.edu.au/glossary/sci/research/?ajax) how some discoveries or inventions have increased scientific knowledge and provided evidence about natural events that cause rapid changes at the Earth's surface L * [investigate](http://syllabus.bos.nsw.edu.au/glossary/sci/investigate/?ajax) a recent Australian example of the effect on the Earth's surface of extreme weather conditions, eg cyclones, droughts or floods * identify ways that advances in science and technology have assisted people to plan for and manage natural disasters to minimise their effects, eg detection systems for tsunamis, floods and bush fires SE |